An

Inaugural Dissertation

On

Haemoptysis

For

The Degree

Of

Doctor of Medicine

In

The University of Pennsylvania

By

Henry Lippincott

of

Fallsington

Pennsylvania

Passed March 1829

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To John Phillips M.D.

Of Bristol Pa.

Dear Sir,

I feel anxious, in departing from you (under whose immediate and benevolent care have been directed my medical studies,) that I may be permitted the privilege of thus publicly returning you my most cordial thanks for the many distinguished services and attentions I have received, and hope that you will allow me to solicit a continuance of them, together with that confiding friendship, by the influence of which I have so often been benefitted.

To you therefore, as a person extensively acquainted with the Medical science, and whose usefulness in the practice of the profession, justly merits the distinguished reputation you have so happily acquired,

This dissertation is respectfully inscribed,

By your friend and pupil,

H. Lippincott.

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To the Medical Professors of the
University of Pennsylvania.

Gentlemen,

Being sensible of the very profitable information I have derived from your valuable and interesting Lectures, I am prompted to take the liberty of thus publicly tendering you my most respectful acknowledgments; as also for the many parental cautions with the good and instructive advice (so necessary to the young practitioner) you have so often been pleased to intersperse throughout the Lectures of your individual and respective courses.

That the public may long continue to receive the salutary effects and experience of your endless researches and improvements is the most ardent wish of,

Gentlemen

Your humble and
Obedient servant

H. Lippincott.

Symptoms of Haemoptysis.

This disease means in the full acceptation of the term, a dis-
-charge of blood from the lungs, and it usually comes on with a
sense of lightness, weight, or anxiety in the breast affecting the or-
-gans of motion, which are increased on full inspiration; some-
-times there is a slight uneasiness of breathing, and a short
tickling cough, which is much increased by moderate exer-
-cise:- Symptoms of fever are also present, such as shivering
sensations, coldness of the extremities, slight pains in the back
and loins, a sensation of heat under the sternum, flushed coun-
-tenance, lassitude, flatulence, costiveness, a dry skin, & hard
pulse; but still we must admit that these are subject to
great variety, for I myself have seen the pulse full, soft,
and frequent. Yet it sometimes comes on suddenly without
any such warnings as just mentioned, the flow of blood be-
-ing the first and only symptom observed, and this is said
to be immediately preceded by a saltish taste in the mouth,
with somewhat of coughing from a slight tickling sensation
being felt at the top of the larynx, to relieve this a hawking is

made, which brings up from the lungs a small portion of blood of a florid arterial colour, and of a frothy appearance, which is quite sufficient to characterize the disease; the irritation soon returns and in the same manner more is brought up with a rattling noise in the windpipe; the tongue generally wears a natural appearance; there is nothing worthy of notice in the blood drawn from a vein, except there exist a scrofulous predisposition in the system, in which, my Preceptor informs me he generally finds the blood sizy.— This is commonly the manner in which Hæmoptysis begins; in some instances the blood that is discharged is in very small quantity, and ceases spontaneously or is stopped by the remedies employed; in other cases a slight spitting continues for several days together, and is often renewed on very slight exertions.

Of the Remote Causes.

Having now given in as brief and concise a manner as possible some of the principal symptoms by which this disease may be characterized, I shall next proceed

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to the consideration of the remote or predisposing and exciting causes that are connected with Hæmoptysis; for it is by these we are to determine the probable and most likely terminations of the disease, and at the same time to be directed in our method of treatment. The first and most important of these causes, I consider to be a plethoric state of the system, and particularly of the vessels of the lungs, which are situated in a loose cellular texture, covered only by a thin and tender membrane; consequently from this circumstance together with their lesser capacity to resist the momentum of the blood, which necessarily flows with greater rapidity through them than any other vessels of the body; and from the great number of exhalent vessels that always exist in the mucous membranes, having here but a short course to run from the superficial situation of the blood vessels; it is clear that whatever would have a tendency to produce congestion, must undoubtedly expose them more or less to rupture and anastomosis, the latter being unquestionably the most frequent cause as has been satisfactorily proved by Bichat.

The second and but little inferior to this, is that of a scrofulous diathesis, which claims perhaps an equal share of attention with the first, especially from a consideration of its being a com-plaint that is more gradual in its advancements and more difficult to repel;— Persons of this description are therefore much exposed to Hæmoptysis, and we accordingly infer, that it is in such cases often hereditary.—

A third predisposing cause may be considered the particular time of life in which it happens. It was remarked by Hippocrates and has since been confirmed by modern observation, that Hæmoptysis chiefly prevails in persons between the ages of fifteen and thirty-five.— It very rarely happens to children under twelve years of age, and is not frequent after that of five and thirty. To whatever cause it may be referred, the fact is unquestionable, that there is a remarkable predisposition to hemorrhage from the lungs at this period of life.

Of the Exciting Causes.

These we find are very numerous, some acting

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more immediately upon the lungs, and others indirectly through the medium of the general system. Those which are considered the most important, and that act directly upon the weak blood vessels, are external injuries or violence which form congestions; as by any violent exertion either in running, jumping, wrestling, fighting, lifting heavy weights, or swimming; and of the lungs in particular as in long and loud speaking, singing, playing on wind instruments of music, bursts of laughter, violent paroxysms of passion, of glass blowing or of protracted coughs.- Those which act indirectly are full or irregular living, excessive drinking, breathing air which is too much rarefied by heat, by being confined in hot stove rooms and crowded assemblies;- or as some allege from some considerable and sudden diminution of the weight of the atmosphere, which apparently occasions the same effect as heat;- as instanced in those ascending very high mountains, which has been fully verified by Dr. Saussure and Baron Humboldt- And in further confirmation Dr. Meade mentions

an instance in Edinburgh of several cases of Hæmoptysis having occurred on an occasion of an eclipse of the Sun, the atmosphere being found lighter at the time by the Barometer than it had ever been known to be in that place. It may also occur to persons who have suffer-ed from a suppression of some accustomed and peculi-ar evacuation, the most frequent instance of which is in females in whom the catamenial discharge has been arrested; and also to those of debilitated constitutions, who have for years had discharges kept up by incurable ulcers, that have served as issues or drains; which so long as they have been kept open have tended to appease a cough or some other troublesome symptom:- But un-der these circumstances should they be suppressed by an amputation, Professor Gibson remarks, "that the patient perhaps in a short time gets apparent-ly well, but in the course of a few months, evident disorder of some of the internal organs, and of the lungs es-pecially shows itself, & death in a short time follows." +

+ Gibson's Surgery - edit. 2nd. Vol. 2nd. p. 406.

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Diagnosis

We must acknowledge that it is not always easy to determine from what internal part the blood proceeds when thrown out of the mouth, whether it be from the stomach, mouth, fauces, trachea, the adjoining cavities of the nose or lungs.–

To distinguish Hæmoptysis from Hæmatemesis which it most resembles, we are to recollect that hemorrhages from the stomach are not attended by any pulmonary affection whatever, neither is there any cough, dyspnoea, pain, or oppression in the thorax; the blood is brought up by vomiting, and is uniformly known by its dark, black, and grumous appearance, as also by being mingled with the contents of the stomach, and is commonly in greater quantity than when it proceeds from the lungs; the pulse is much more reduced from a hemorrhage of the stomach than from the lungs.–

It is distinguished when coming from the internal surface of the mouth, by its being unaccom-

-panied with cough, dyspnoea, or hawking, neither is there any pain or oppression in the thorax; and moreover may easily be seen by an examination.-

When the blood proceeds from the trachea, fauces, or adjoining cavities of the nose, it may be expectorated by mere hawking, and generally it is of a less florid or arterial colour than when it is brought from the lungs.-

The appearance of the blood and the manner in which it is brought from the lungs has already been noticed.-

Prognosis.

Of the prognosis of diseases, it will be admitted, that the task is often very perplexing and embarrassing, particularly to predict with any kind of certainty on the termination of diseases, that are so frequently involved in obscurity, together with the consideration that patients often recover under very unfavourable circumstances; whilst others have died

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when the most favourable prognostics attended them: But of the present disease Hæmoptysis I think it is very rarely attended with immediate danger. Professor Chapman has seen but one case of death from the excessive loss of blood in the course of his very extensive practice. As far as this disease is idiopathic and as the mere effusion of blood is concerned it may undoubtedly be considered as favourable. Neither can it be considered dangerous where no symptoms of Phthisis Pulmonalis have preceded or accompanied the hemorrhage.-

I am told by Dr. Phillips, my preceptor, that, where there is a scrofulous diathesis or an hereditary predisposition to Phthisis Pulmonalis, hæmoptysis almost invariably terminates in consumption. We find the prognosis to be unfavourable when the vessels of the lungs become affected from too frequent hemorrhage, and also when it attacks persons of a tender and delicate habit;- especially when induced in females by a suppression of the catamenial discharge, is often the precursor of pulmonary consumption, and may be considered as an affection of the most alarming import.-

Treatment.

In the treatment of Hæmoptysis our first attention must be directed to check the immediate effusion of blood, and for this purpose the reduction of the arterial system by venesection claims our notice, and that we may derive ample benefit from the practice, it is necessary to make a large orifice, by this means the system feels the impression more fully, and the flow of blood is immediately diverted from the lungs, whilst small and repeated bleedings can only produce a temporary relief, and puts the patient to unnecessary trouble and inconvenience, which under these circumstances should always be carefully avoided.- Closely connected to blood-letting in its effect I have found the internal exhibition of the Chloride of sodium prove very efficacious in checking the hemorrhage:- It is generally administered in the dose of a tea-spoonful every five or ten minutes according to circumstances, directing the patient to take it in a dry state, and as it gradually dissolves in his mouth to swallow the solution by degrees. All kind

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of exercise should be avoided that would have a tendency to increase the circulation, and more particularly that of speaking; cold air should be permitted to pass freely through the apartment, being careful at the same time, to have the patient covered with as few bed clothes as possible:- In addition to the above may be administered ice, or ice-cold acidulated drinks. Much benefit has also resulted from the use of cold applications to the chest and arm pits which are very susceptible to the action of cold.

These remedies failing our next resource may be to the Acetate of lead in the dose of two or three grains combined with the fourth or sixth of a grain of opium given every two ~~x~~ hours; this is a remedy I have employed with great advantage on several occasions.

Alum has claimed the attention of some practitioners as a remedy in hemorrhage, but it seems better calculated to prevent the recurrence than to check it.

The sulphates of zinc and copper given in such doses as to excite nausea may be of service.

Of the vegetable astringents, Kino and Catechu have been employed; but as their utility is but limited, they have been superseded by the more active preparations of the Materia Medica. As a remedy, Professor Coxe speaks favourably of the white oak bark in decoction.

Digitalis is frequently employed in this disease; but the case to which it seems most particularly appropriate is that, wherein the discharge of blood is slight, and there exists a hacking cough, pain in the side and breast, together with much weakness, or in other words, where symptoms of pulmonary disease continue after the violence of the first attack is subdued. Under these circumstances I would suggest the Prussic acid as a remedy.

As one of the modes of treating Haemoptysis I find that Emetics have been employed for a long time; they were originally introduced in the treatment of this disease by Dr. B. Robinson of Dublin. In employing them it would be well to resort previously to other remedies, unless the system be reduced to that state wherein

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there is but a slight discharge, they then may be considered as proper and judicious. I am not unconscious that it has been said, that Dr. Willis, who is considered to be good authority, was in the habit of resorting to emetics in all cases of Hæmoptysis and fully confided in them above all other means, as well on account of their safety as efficacy: But upon the whole, I should consider the most judicious plan of administering them, would be in nauseating doses. Of this class of remedies, the Emetic tartar has been much used, and with peculiar advantage in febrile hemorrhages given in small doses.

A solution of the Sulphate of Zinc has been highly recommended for the same purpose by the celebrated Mosely and the late Dr. Barton. Ipecacuanha is considered to be a valuable and most important remedy, and should be given according to the necessity of the case in small doses from a half to two grains; or what may answer better to combine with each dose about the fourth or sixth of a grain of Opium.

The refrigerant medicines are sometimes employed

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in the treatment of Pulmonary hemorrhage. Among which are the neutral salts and many of the acids. The Nitrate of Potash is the most useful especially in reducing vascular action, febrile heat, and excitement. It may be given in the dose of ten to thirty grains, taking care that it does not excite coughing, or it may be combined with minute doses of the antimonial preparations. A still better mode of administering this medicine, is, by dissolving an ounce of it in a quart of water, and to take the whole of it in the course of a day. If it should be given in such quantities as to operate on the kidneys, it is said, that beneficial effects will also result from the practice.

In addition to the preceding remedies I find that the Narcotics have been employed with some advantage upon the principle of quieting irritation and subduing arterial action. Of Digitalis, which is generally considered to be associated with this class I have already spoken. To which I may add the Cicuta, and Henbane, and Opium. Of the Cicuta and Henbane

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I have no knowledge in the treatment of the present disease, Whilst opium by its sedative effects has proved very beneficial, although esteemed by some practitioners as a stimulant, which possibly may be the case: yet the fact must be admitted, that the opiates are indispensable, particularly when the hemorrhage has been aggravated by the irritation being kept up in the pulmonary organs by the action of coughing or dyspnoea.

As yet I have not noticed the state of the bowels, which should not be neglected; as soon as the flow of blood is checked the saline purgatives, such as the Epsom salts, &c. might be given from their operating with the least nausea or irritation. Castor oil if the stomach can retain it answers very well. Magnesia is apt to excite coughing, unless it be acidulated with lemon juice, or some acid drink after taking it. When the pulmonary affection is combined with some disorder of the digestive organs, the blue pill is recommended by Mr. Abernethy, every

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other night, to be worked off the next morning by Epsom salts or Cream of tartar.

I have now given the general plan of treatment that is commonly adopted by the most eminent practitioners for the relief of active hemorrhage from the lungs, and shall next say a few words on Passive hemorrhage, or that of debilitated action in which there is a weakness of the pulse with much emaciation; it mostly happens to the valetudinary, and it is not uncommon to find the patient so much exhausted, that we are deterred from bleeding; this circumstance is oftentimes owing to the undue determination to the lungs which consequently become congested, hence the indication here is clear, that we must at once interrupt and disperse those morbid congestions; and to attain this end in the most effectual manner we immediately resort to cupping or leeching, giving at the same time a teaspoonful of the Spirits of turpentine every half hour. After we are fully assured the blood is removed

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from these congested parts, it will be proper to support the tone of the system by the use of the Sulphate of Quinine or the Peruvian bark. And of the Mineral acids, which claim attention in this stage of the disease, the Sulphuric and Nitric are preferred, merely to suppress the bleeding the Sulphuric is the best, but to rectify the system the Nitric is most commonly employed.

With these remedies we generally treat feeble or passive hemorrhage from the lungs, to which may be added, provided the patients system be previously prepared, the habitual use of moderate exercise on horseback; by nourishing diet as milk and eggs; and by malt liquors especially Porter.

As Haemoptysis is sometimes connected with constitutional affections, there is a liability of its recurrence from any slight provocation, to avoid which the following prophylactic precepts should be strictly observed.

1st — Avoid every circumstance which would have

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a tendency to increase the circulation, hence we should direct a mild diet, gentle exercise, and a perfect abstinence from exciting causes of every kind.

2ly.– Avoid taking cold by every possible precaution, for nothing is so apt to produce a recurrence of the hemorrhage as catarrh.

3ly.– In cases where there is a strong predisposition to this disease, strict attention must be paid to the state of the chest, pulse, and respiration; which must all be regulated by the discriminating judgment of the practitioner.

4ly.– If there exist any local affection, much good will result from the use of blisters or setons.

5ly.– In obstinate cases salivation may be resorted to, by which the disease may possibly be supplanted.

I shall conclude by observing, that it sometimes happens with our very best treatment, that the disease resists all our endeavours,

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when as a last resource we should advise the removal of the patient to a warm climate and if possible to have him removed thither by a sea voyage.–